UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

MAR 06 2014

Mr. Thomas Frick
Director
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection
Mail Station 3000
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

Dear Mr. Frick:

The United States Environmental Protection Agency has completed its review of the revisions to establish site specific criteria for total phosphorus (TP) and total nitrogen (TN) for the marine portion of the Fenholloway River and adjacent coastal waters, specifically the area associated with Waterbody Identification Unit (WBID) 3473A. The TP and TN site specific criteria were established by Final Order on December 4, 2013, and submitted to the EPA by Matthew Z. Leopold, General Counsel for Florida Department of Environmental Protection, to A. Stanley Meiburg, Acting Regional Administrator of the EPA's Region 4 Office, by a letter dated January 7, 2014.

The Final Order also included the adoption of the TP and TN loads which specifically apply to the Buckeye mill, and represent a portion of the above mentioned total loads. However, as stated in the Final Order, only the limits for the total allowable load of TP and TN "shall constitute site specific numeric interpretations of the narrative nutrient criterion in paragraph 62-302.530(47)(b), F.A.C. and thus, shall constitute surface water quality criteria. See § 5, Chpt. 2013-71, Laws of Florida."

As laid out in the enclosed decision document, titled *United States Environmental Protection Agency Determination Under § 303(c) of the Clean Water Act - Review of the Final Order Water Quality Based Effluent Limits for Total Phosphorus and Total Nitrogen Criteria for the Fenholloway Estuary*, the EPA is approving the revised TP and TN criteria. This approval replaces the TP and TN criteria associated with the EPA's September 26, 2013, approval of the Fenholloway River Estuary segment leaves in place the chlorophyll a criteria for the same segment and does not modify the TP, TN, or chlorophyll a criteria approved for the Fenholloway Offshore segment on September 26, 2013.

The Agency's decision to approve the revised TP and TN criteria is subject to the results of consultation under section 7 of the Endangered Species Act. The Agency will notify FDEP of the results of the section 7 consultation upon completion of the action.

We would like to commend you and your staff for your continued efforts in environmental protection for the State of Florida. Should you have any questions regarding the EPA's action today, please contact me

at (404) 562-9470 or have a member of your staff contact Ms. Lauren Petter, Florida Water Quality Standards Coordinator at (404) 562-9272.

Sincerely,

James D. Giattina
Director
Water Protection Division

Enclosure

cc: Mr. Matthew Z. Leopold, FDEP
Ms. Melissa Long, FDEP

United States Environmental Protection Agency Determination Under § 303(c) of the Clean Water Act - Review of the Final Order Water Quality Based Effluent Limits for Total Phosphorus and Total Nitrogen Criteria for the Fenholloway Estuary

On January 7, 2014, Florida Department of Environmental Protection submitted new and revised water quality standards for U.S. Environmental Protection Agency review. The submittal was received by the EPA on January 9, 2014. The revisions were submitted to the EPA by Matthew Z. Leopold, General Counsel for FDEP, to A. Stanley Meiburg, Acting Regional Administrator of the EPA's Region 4 Office. This document summarizes the conclusions of the Agency's review of the establishment of total phosphorus (TP) and total nitrogen (TN) criteria for a specific segment of the Fenholloway Estuary.

Under Sections 303(a)-(c) of the Clean Water Act (CWA), 33 U.S.C § 1313(a)-(c), states are required to establish water quality standards and submit them to the EPA for approval or disapproval. Likewise, revisions to a state's water quality standard must also be submitted to the EPA for approval or disapproval. As set out more fully below, the EPA is approving the TP and TN criteria as new or revised water quality standards, which were duly adopted under state law in accordance with Chapter 2013-71, Laws of Florida.

Background and New Criteria

On September 26, 2013, the EPA approved the following provision contained in Chapter 2013-71, Laws of Florida (Senate Bill 1808):

> The water quality standard pursuant to s. 403.061(11), Florida Statutes, for total nitrogen, total phosphorus and chlorophyll a in estuaries, and chlorophyll a in non-estuarine coastal waters, shall be the current conditions of those unimpaired waters, accounting for climactic and hydrologic cycles, until such time as a numeric interpretation of the narrative water quality criterion for nutrients is established by rule or final order.

As a result of the approval, the applicable numeric criteria for TP and TN in the Fenholloway River Estuary segment were 0.054 mg/L, as an annual geometric mean not to be exceeded more than once in three years and 0.66 mg/L, as an annual geometric mean not to be exceeded more than once in three years, respectively.

On December 4, 2013, a Final Order was signed, establishing TP and TN criteria for portions of the Fenholloway Estuary. The following total TP and TN loads to the Lower Fenholloway River estuary were adopted as follows:

> TN shall be maintained at or below 5,573 lbs/day, expressed as an annual average; and TP shall be maintained at or below 839 lbs/day, expressed as an annual average load.

The Final Order also included the adoption of the TP and TN loads which specifically apply to the Buckeye mill, a facility that discharges to the Fenholloway River and represent a portion of the above mentioned total loads. The TP and TN loads are 600 lbs/day, expressed as an annual average load and 2,698 lbs/day, expressed as an annual average, respectively. However, as stated

in the Final Order, only the limits for the total allowable load of TP and TN "shall constitute site specific numeric interpretations of the narrative nutrient criterion in paragraph 62-302.530(47)(b), F.A.C. and thus, shall constitute surface water quality criteria. See § 5, Chpt. 2013-71, Laws of Florida." The EPA reviewed the revised criteria as site specific criteria pursuant to section 303(c) of the CWA and the EPA's implementing regulations at 40 CFR Part 131.

EPA's Review

The EPA's implementing regulation found at 40 CFR 131.11(b)(1) provides that when a state establishes numeric criteria, those numeric values should be based on (i) 304(a) Guidance, (ii) 304(a) Guidance modified to reflect site-specific conditions, or (iii) other scientifically defensible methods. Furthermore, 40 CFR 131.11(a) requires that state-adopted criteria protect the designated uses of state waters.

Prior to the submittal of the current revisions, the EPA and FDEP developed a process for the State to demonstrate that site specific criteria for nutrient parameters, such as those based on water quality based effluent limits (WQBEL) or total maximum daily loads (TMDL), are also protective of designated uses and represent scientifically defensible criteria. As part of this documentation process, a template has been developed for the State to provide to EPA to assist the EPA in its review of the submitted criteria for consistency with the CWA and its implementing regulations. Therefore, the EPA's review addressed the following items as they support the State's development of other scientifically defensible methods: 1) identification of the spatial extent of the Hierarchy 1 criteria and which causal/response variables are being adopted, 2) analysis of the documentation supporting the development of the WQBEL-based TP and TN criteria and how the criteria demonstrate full support of the designated uses and 3) analysis of the conclusions that downstream waters will be protected and that these revisions will not contribute to impairments of other nutrient related criteria. The following three sections reference the pertinent excerpts from the template submitted by the State in support of these three criteria development components.

Identification of Criteria and Spatial Extent

As laid out in the State's "WQBEL Summary Document 1-7-13 FINAL" document (WQBEL Support Document), the waterbody extends from the confluence of the Fenholloway River and Spring Creek (N: 30°4'28.23"/ W: -83° 30'4.70") to the Gulf of Mexico (N: 29° 58'37.00"/ W: -83° 47'13.37"), approximately 12 river miles. On September 26, 2013, the EPA approved TP, TN and chlorophyll *a* (chl *a*) criteria for this and surrounding waterbodies. However, the January 7, 2014, revision modifies the existing TP and TN criteria for the Fenholloway River Estuary segment. The criteria being replaced are shown in strikeout and the newly adopted criteria are shown underlined.

Location	**TP Criterion**	**TN Criterion**	**Chl *a* Criterion**
Fenholloway River Estuary	~~0.054 mg//L, annual geometric mean not to be exceeded more~~	~~0.66 mg/L, annual geometric mean not to be exceeded more~~	3.8 µg/L, annual geometric mean not to be exceeded more

	~~than once in three years~~	~~than once in three years~~	than once in three years
Fenholloway Offshore	0.061 mg//L, annual geometric mean not to be exceeded more than once in three years	0.87 mg/L, annual geometric mean not to be exceeded more than once in three years	6.6 µg/L, annual geometric mean not to be exceeded more than once in three years
WQBEL based Fenholloway Estuary (WBID ~~3~~473A)	TP= 839 lbs/day, expressed as an annual average load	TN= 5,573 lbs/day, expressed as an annual average	*No modification was made to the values above as part of this action*

Analysis of Use Support

The following text included on page 5 of the WQBEL Support Document summarizes the development of the TP and TN loads.

> A coupled hydrodynamic/water quality model of the Fenholloway River, Econfina River and near shore Gulf of Mexico region was developed and calibrated for completing the EPA nutrient TMDL. The model study area extended along the Gulf Coast from the Aucilla River in the northwest to about 8 miles southeast of the Fenholloway River, extended offshore into the Gulf of Mexico about 10 miles, and included the Fenholloway and Econfina Rivers. Both models were calibrated with hydrodynamic and water quality data collected during the 1998 to 2001 modeling period. An annual average chla target of 5 µg/L was used to assess compliance with the narrative nutrient standard in the Fenholloway offshore area. This baseline reference level for an estuary should be considered to have 'good' or non-impaired water quality which is consistent with the USEPA National Coastal Condition Report II recommendations for Gulf Coast estuaries (USEPA, 2004) using chla as the indicator or end-point.
>
> Since the Department determined that a more appropriate approach to assess system health was to judge compliance with an algal target or criterion over a region rather than at one specific location, the model results were averaged over two separate zones near the mouth of the Econfina and Fenholloway Rivers … during the growing season (May-October). The results of the computed growing season and annual average chla levels for each of the zones over the 1998 – 2001 simulation period for each of the years in both the Fenholloway and Econfina zones were less than the chla target of 5 µg/L as an annual average. The use of a growing season average chla level to judge compliance with an annual standard provides a margin of safety.
>
> The Level II WQBEL Report (August 29, 2013) and Addendum (September 13, 2013) provided the TN and TP loads based on the critical year 1998 that would be protective of designated uses in the Fenholloway River estuary and downstream waters. The report also summarizes the Fenholloway River transparency SSAC and model results that demonstrate that all four years (1998 – 2001) comply with the transparency SSAC.

Analysis of Use Support of Other Parameters and Downstream Protection

As part of the State's analysis, the impact on other parameters, such as dissolved oxygen (DO) and transparency, was assessed on pages 4 through 6 of the WQBEL Support Document.

> The Level II WQBEL submitted to the Department on August 29, 2013 evaluated DO conditions in the Fenholloway estuary under the Department's revised DO criteria for marine waters based on the waste load allocation (WLA) for a Buckeye discharge to the estuary in the EPA 2004 TMDL and demonstrated that the DO criteria would be met. Simulations for the 1998 – 2001 period were completed under WLA limits in the EPA 2007 and EPA 2009 TMDLs (with a correction to the nitrogen loadings for nonpoint sources based on earlier under-estimates of the organic nitrogen fraction); and the modeling demonstrated that the downstream annual average chla target would be met in all four years. Modeling results were also presented that supported compliance with the Fenholloway River transparency SSAC in all four years. (Page 4)
>
> The Level II WQBEL also evaluated impacts to DO and demonstrated through modeling that the new marine DO criteria would be achieved. Potential impacts from color, suspended solids and algal biomass on transparency were also evaluated as part of the Level II WQBEL. The compensation depth criterion in the Fenholloway River transparency SSAC was met in all four modeled years. (Pages 5-6)

Furthermore, since a chl *a* criterion also applies to the Fenholloway Estuary segment and TP and TN loads can influence the levels of chl *a* concentration in the water, the State provided the results of their analysis in regard to the effect of the WQBEL loadings on the chl *a* concentrations in the Estuary and Offshore segments. On page 2 of the WQBEL Support Document, the State states:

> In the August 1, 2013 Report to the Governor and Legislature titled "Status of Efforts to Establish Numeric Interpretations of the Narrative Nutrient Criterion for Florida Estuaries and Current Nutrient Conditions of Unimpaired Waters" ("August 1 Report"), the numeric interpretations of the narrative nutrient criterion for both the Fenholloway River estuary and the downstream receiving water (Fenholloway Offshore) included annual geometric chlorophyll a concentrations of 3.8 µg/l and 6.6 µg/L, respectively, not to be exceeded more than once in a three year period. The Level II WQBEL submitted to the Department on August 29, 2013, included the calculated annual geometric mean chlorophyll a concentrations for both areas for the years 1998 – 2001 simulated in the WQBEL (Table 6 of the report) and demonstrated that the August 1 Report chlorophyll a values were met in all four years for both areas.

Lastly, on page 6 of the WQBEL Support Document, the State considered downstream protection and the application of future monitoring related to the downstream protection provision at 62-302.531(4), F.A.C. and the nutrient related provisions with 62-303, F.A.C.

> The NPDES permit for the Buckeye facility includes effluent and receiving water monitoring requirements. As described earlier, BVA has conducted an ecological monitoring program for Buckeye since 2004 that includes key water quality parameters

and SAV assemblages in the Econfina and Fenholloway River estuaries and adjacent coastal waters. Annual reports are provided to the Department. Data collected through these monitoring activities will be used to evaluate the effect of the discharge on the established Hierarchy 1 TN and TP criteria in subsequent water quality assessment cycles. BVA data and data collected by project CoastWatch will be assessed as part of the 303(d) assessment, including comparisons to the NNC and trends in TN, TP, and chla.

Conclusions Regarding State's Use of Other Scientifically Defensible Methods

The revised magnitude, duration, and frequency criteria components identified above meet the definition of "criteria," specifically as "levels...that support a particular use." 40 CFR 131.3(b). Furthermore, by clearly identifying the spatial extent the State has specified where the criteria must apply in order to protect the designated uses. Therefore, the identification of the criteria and their spatial extent is consistent with 40 CFR 131.11 which requires criteria be based on sound scientific rationale and contain sufficient constituents to protect the designated use.

Through modeling analyses of the subject water, supplemented with documentation supporting the use of a specific chl *a* concentration end point, the State was able to demonstrate the levels of nutrients associated with the criteria will not negatively impact other applicable water quality criteria. The applicable criteria identified (DO, transparency and chl *a*) represent criteria which are often negatively impacted by the influence of nutrient concentrations on a waterbody. Demonstrating the revised TP and TN criteria will not negatively impact the other applicable criteria supports the conclusion that the criteria protect the applicable designated uses for the waterbody. This demonstration is consistent with the 40 CFR 131.6 and 131.11.

In addition, the State analyzed the effect of the criteria on the downstream nutrient criteria and other provisions of the State's regulations (62-303, F.A.C). The State was able to demonstrate that the criteria take into consideration the water quality standards for downstream waters and can ensure that the revised standards provide for the attainment and maintenance of the downstream standards. Also, the consideration of the trend provisions located in 62-303, F.A.C. is consistent with the application of the State's downstream protection narrative provision located at 62-302.531(4). These analyses further support the conclusion that the revisions are consistent with 40 CFR 131.10(b).

Endangered Species Act

Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies, in consultation with the Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS), to ensure that their actions are not likely to jeopardize the continued existence of federally listed species or result in the destruction or adverse modification of designated critical habitat of such species.

With regard to consultation activities for section 7 of the ESA, EPA Region 4 has concluded that the Agency's action to approve the TP and TN site specific criteria would not likely adversely affect listed species or their critical habitat. The EPA's decision to approve the revised TP and

TN criteria is subject to the results of consultation under section 7 of the ESA with the U.S. Fish and Wildlife Service and National Marine Fisheries Service.

Conclusions

Based on the reasons outlined above, it is our conclusion that the requirements of the CWA and 40 CFR Part 131 have been met for the new or revised water quality standards components of the TP and TN site specific criteria. Based on the data presented in support of the revised TP and TN criteria, the EPA concluded the TP load of 839 lbs/day, expressed as an annual average load and TN load of 5,573 lbs/day, expressed as an annual average, for WBID 3473A are protective of the designated uses in the waters to which these criteria apply and represents criteria levels that have been demonstrated to support applicable downstream criteria. Therefore, these revised criteria are approved by the EPA pursuant to section 303(c) of the Act.

3/5/14
Date

Gail Mitchell, for
James D. Giattina
Director, Water Protection Division